

FIG. 1

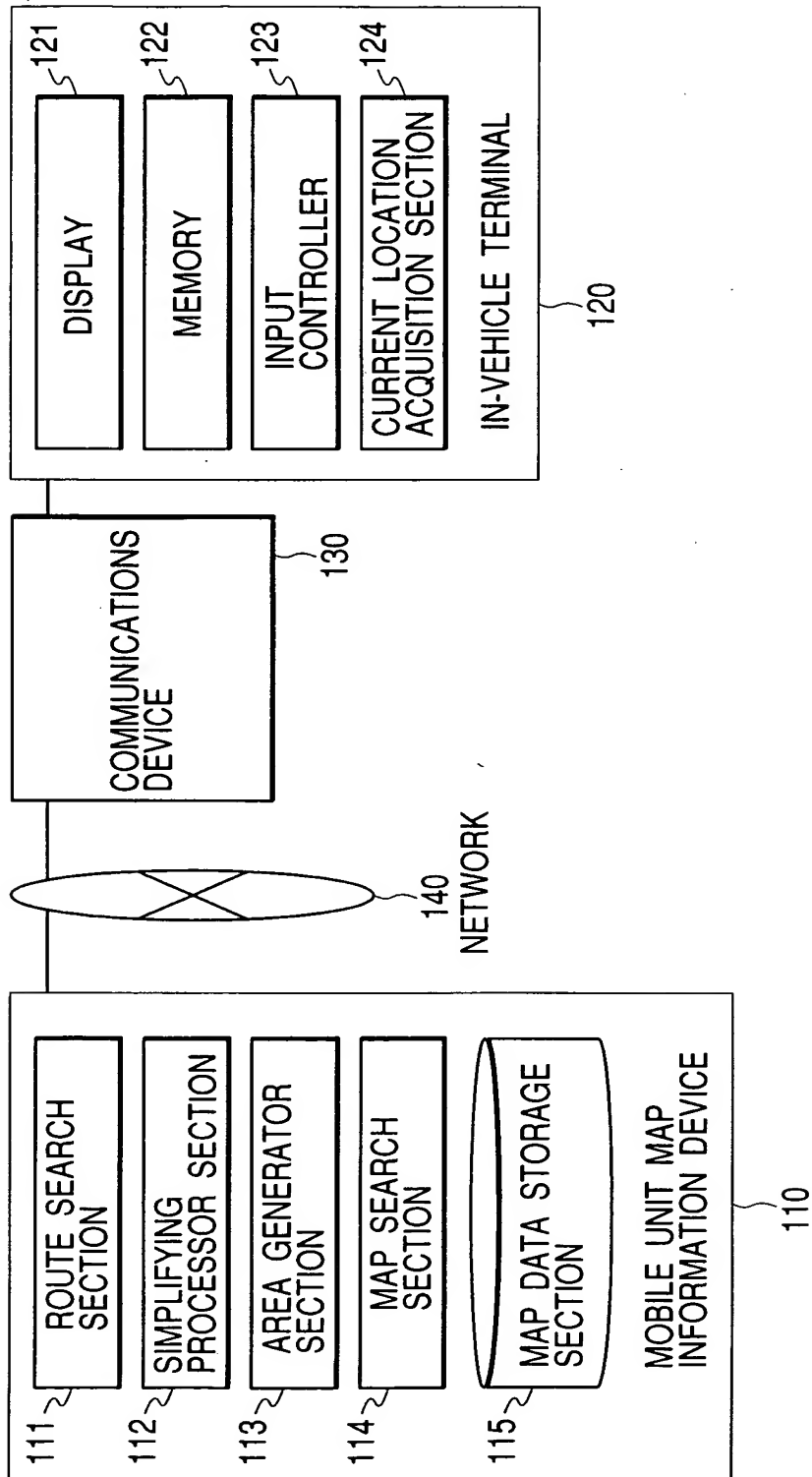


FIG. 2

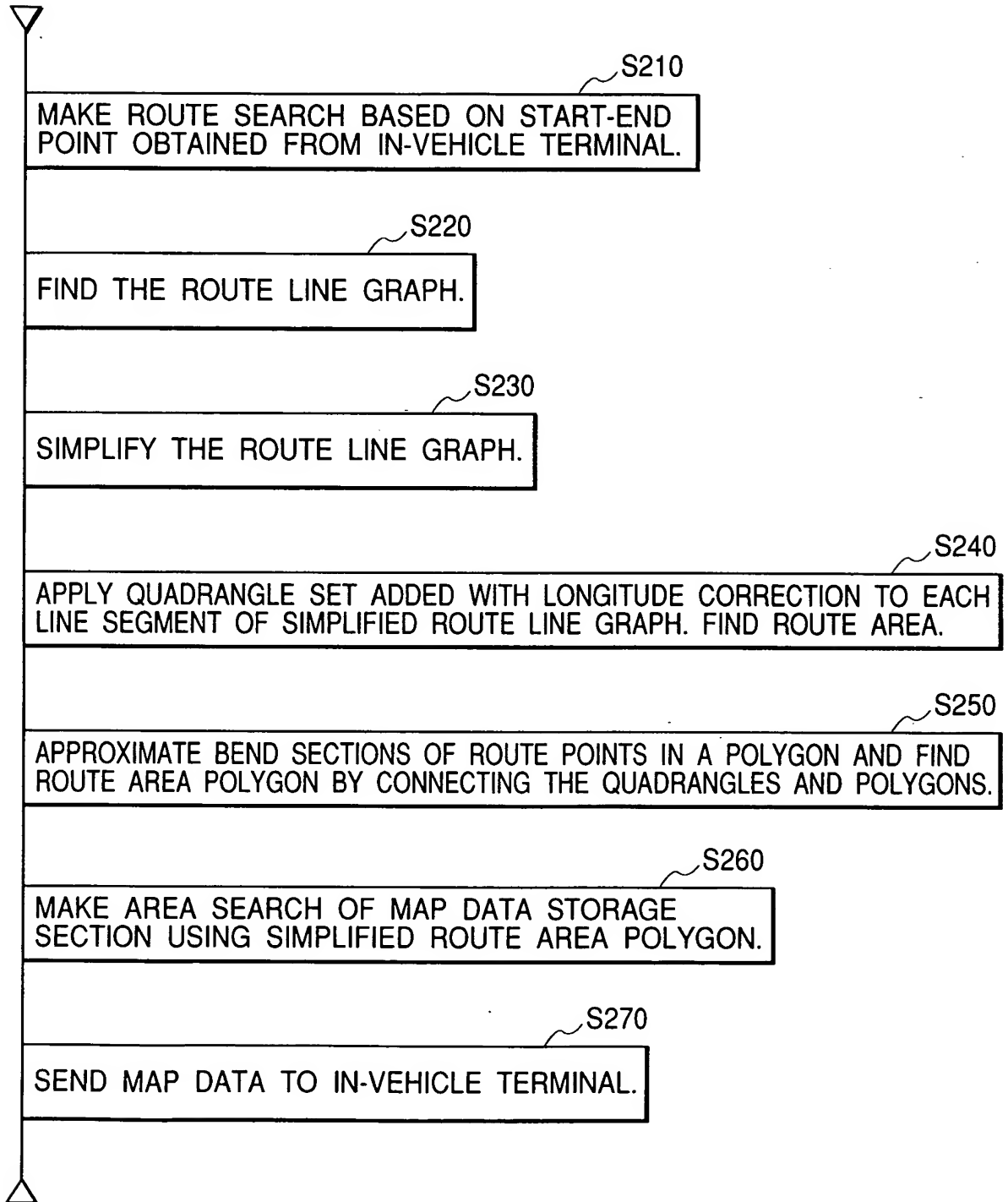


FIG. 3

300

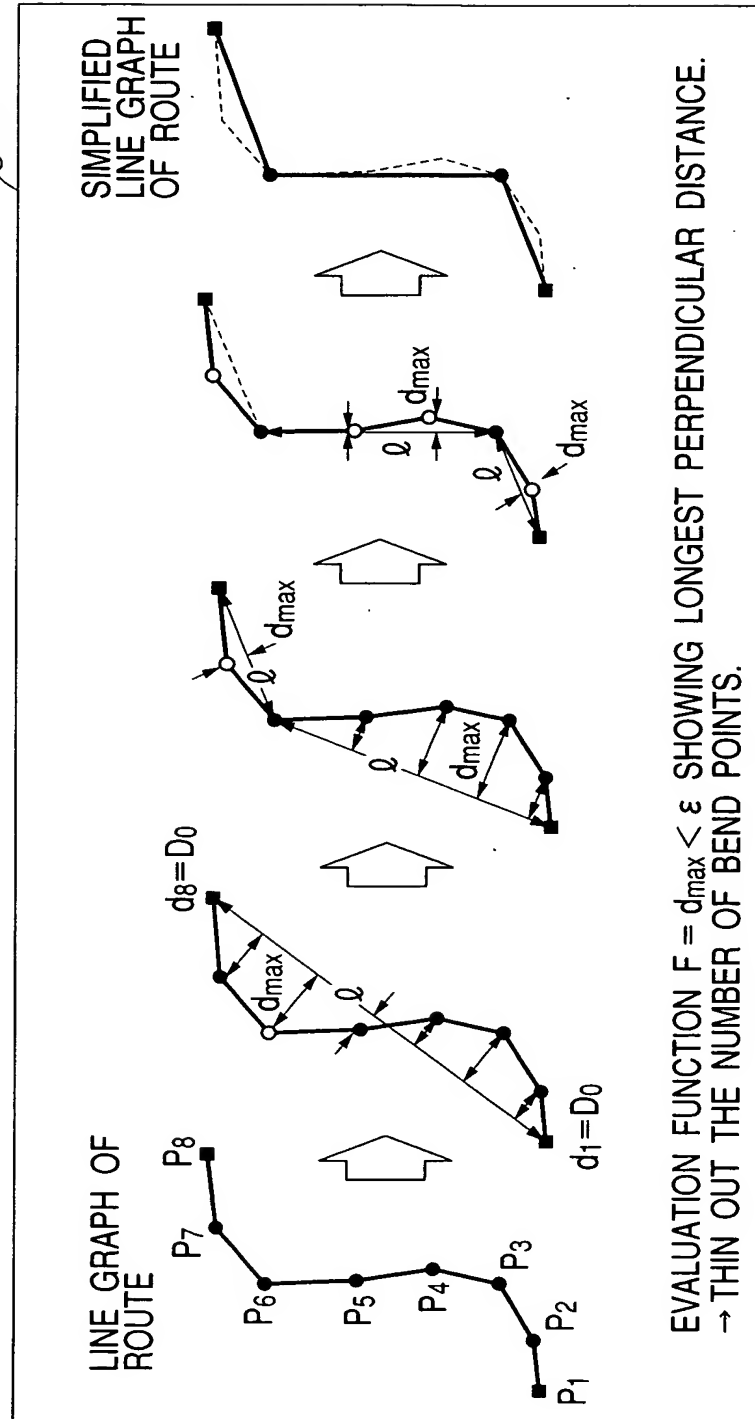
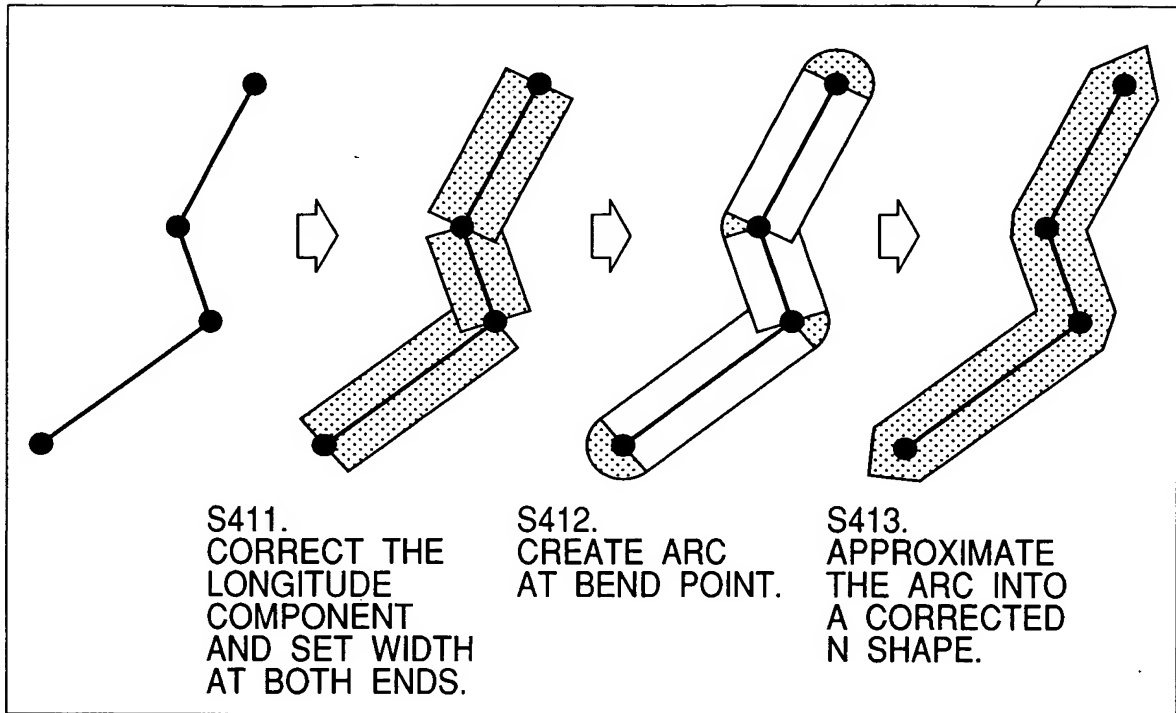


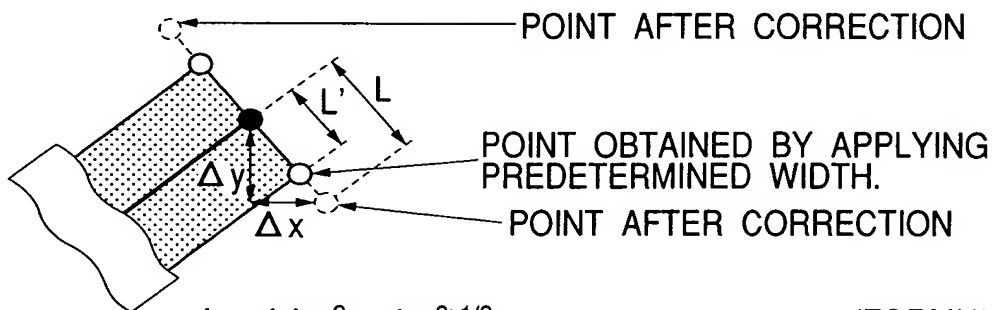
FIG. 4A

410

**FIG. 4B**

420

S411. PROCESSING TO CORRECT LONGITUDE COMPONENT.



$$L = \{\Delta x^2 + \Delta y^2\}^{1/2} \quad \text{----- (FORMULA 421)}$$

$$L' = \{(\cos \theta * \Delta x)^2 + \Delta y^2\}^{1/2} \quad \text{----- (FORMULA 422)}$$

HERE θ IS THE LATITUDE (OR A TYPICAL VALUE FOR LATITUDE)

$$\text{OR, } L' = \{(k * \Delta x)^2 + \Delta y^2\}^{1/2} \quad \text{----- (FORMULA 423)}$$

HERE, k IS THE COEFFICIENT DETERMINED BASED ON THE LATITUDE.

FIG. 5A

500

| LATITUDE | TYPICAL VALUE FOR LATITUDE |
|-----------|-------------------------------|
| 35° ~ 40° | 37.5° |
| 40° ~ 45° | 42.5° |
| 45° ~ 50° | 47.5° |
| ⋮ | ⋮ |

FIG. 5B

510

| LATITUDE | COEFFICIENT k |
|-----------|---------------|
| 35° ~ 40° | 0.79 |
| 40° ~ 45° | 0.74 |
| 45° ~ 50° | 0.68 |
| ⋮ | ⋮ |

FIG. 6A

ROAD TABLE

610

| ID | TYPE | COORDINATES | NAME |
|------|--------------------|------------------------------|-------------|
| 1001 | NATIONAL HIGHWAY | {{22, 141), ..., (34, 244}} | NO. 20 |
| 1002 | METROPOLITAN ROUTE | {{34, 562), ..., (233, 984}} | FUCHU ROUTE |
| 1003 | CITY LOAD | {{859, 349), ..., (83, 909}} | |
| : | : | : | : |

FIG. 6B

POI TABLE

620

| ID | TYPE | COORDINATES | NAME |
|------|------|-------------|--------------------------|
| 2001 | GS | (234, 533) | SO-AND-SO GASOLINE STAND |
| 2002 | SHOP | (163, 499) | ABC STORE |
| 2004 | SHOP | (3, 300) | BURGER SHOP |
| : | : | : | : |

FIG. 6C

LANDSCAPE TABLE

630

| ID | TYPE | COORDINATES | NAME |
|------|--------------|------------------------------|---------------|
| 3001 | LAKE/MARSHES | {{22, 141), ..., (34, 244}} | YAMANAKA LAKE |
| 3002 | PARK | {{34, 562), ..., (233, 984}} | NATIONAL PARK |
| 3003 | RAILWAY | {{859, 349), ..., (83, 909}} | CHUO LINE |
| : | : | : | : |

FIG. 7

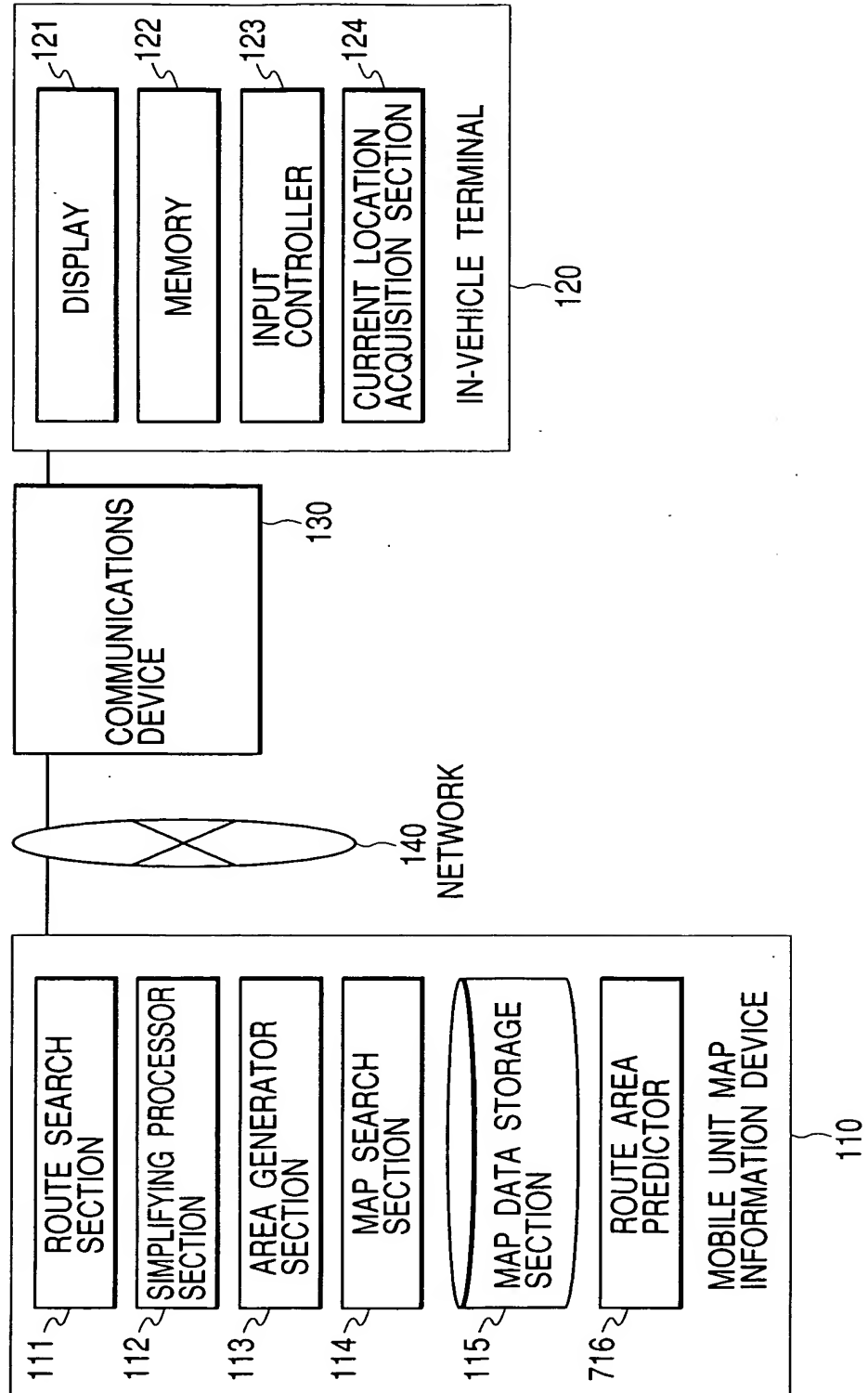


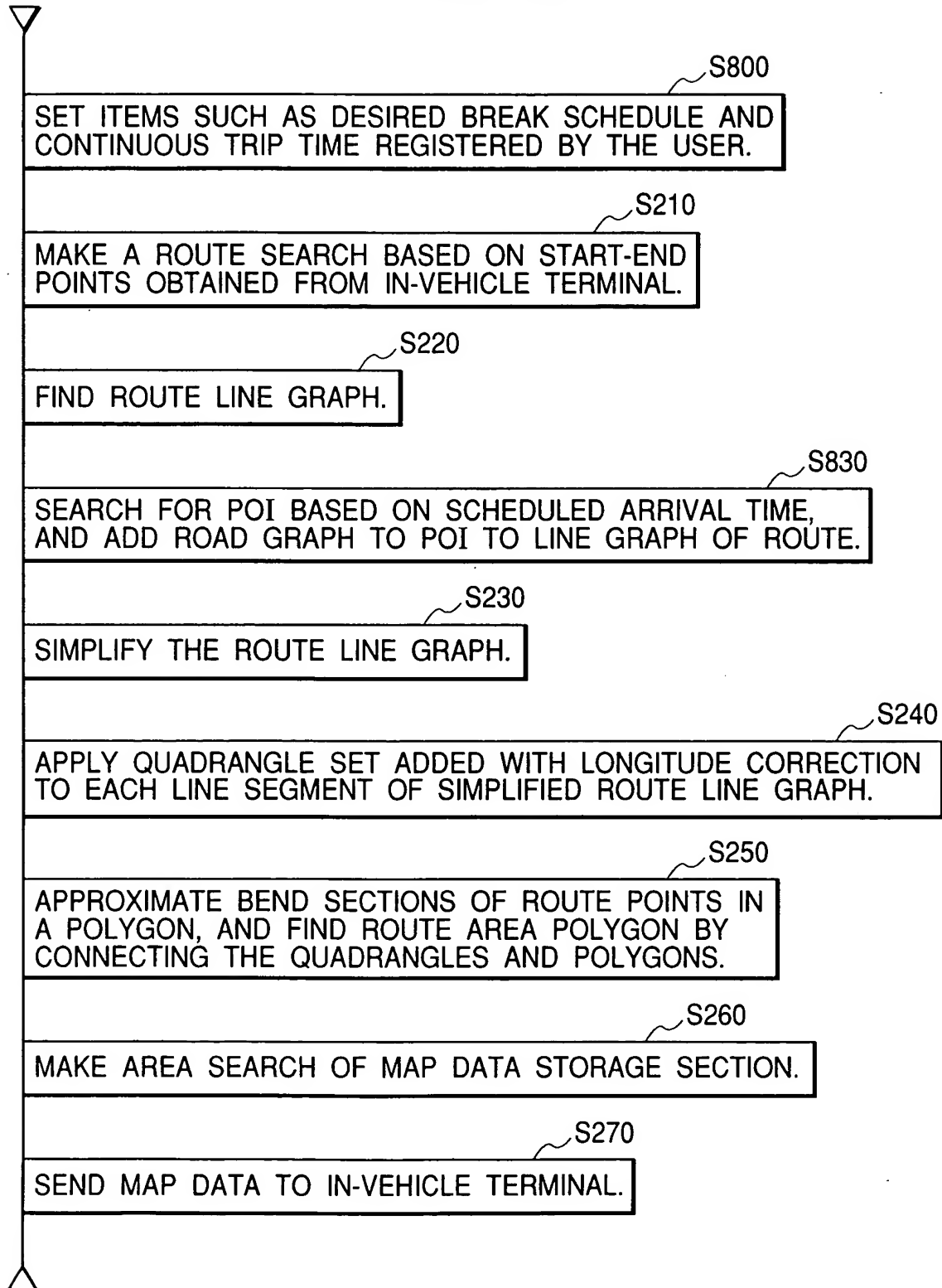
FIG. 8

FIG. 9

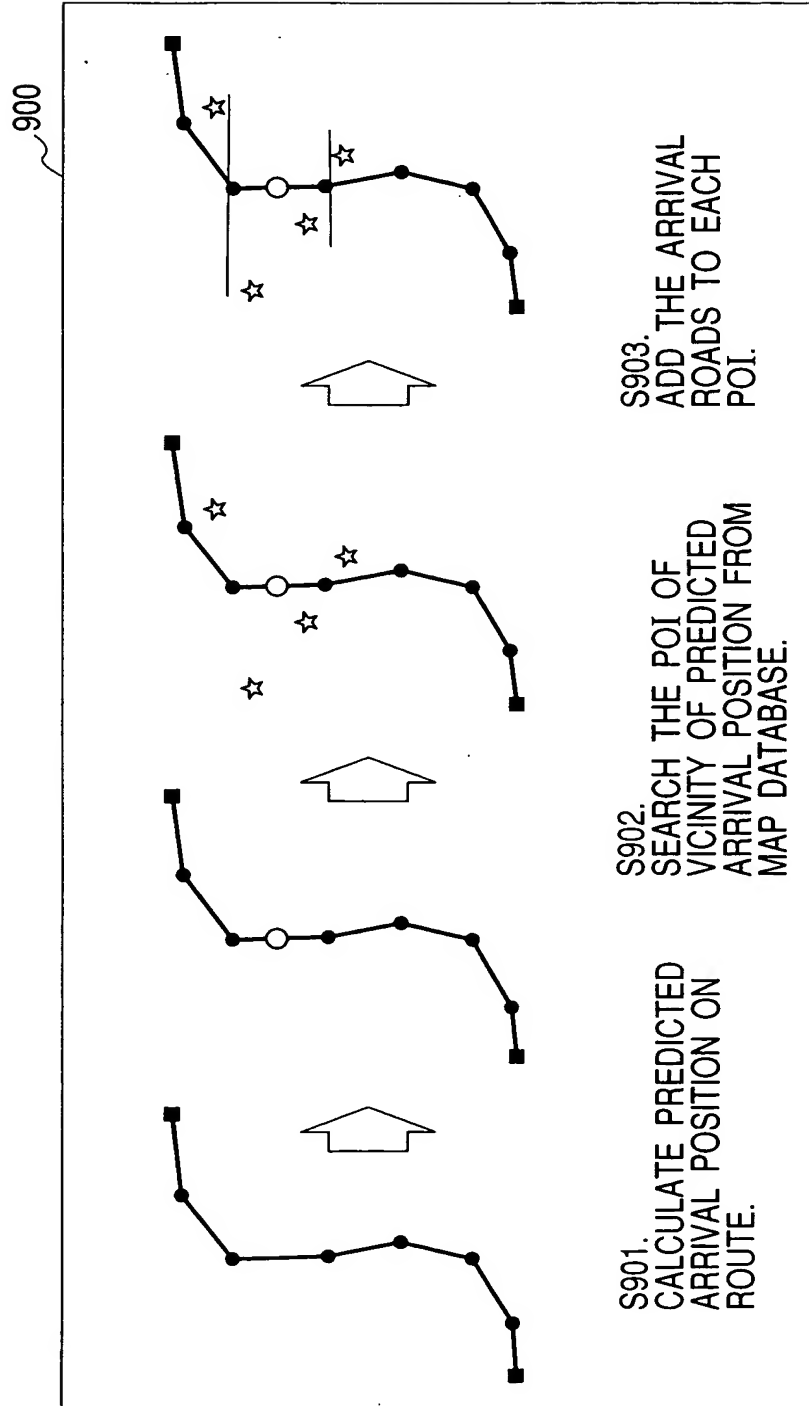


FIG. 10A

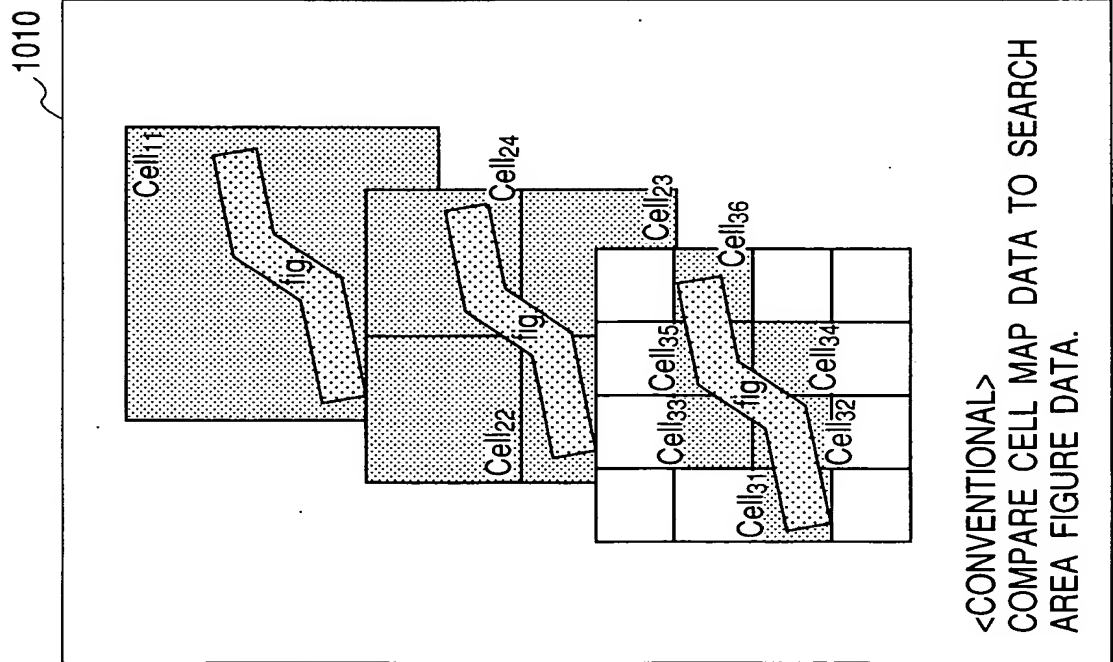


FIG. 10B

